

REMARKS

In an Office Action mailed on March 2, 2007, all pending claims of the present application were rejected. Claims 1-47 and 59-67 were withdrawn in a previous Amendment, and are being canceled in this Amendment. Claims 48-58 and 68-73 are pending in the present application with Claim 48 being the sole independent Claim. Claims 48 and 58 are being amended in this Amendment and Claims 68-73 are being added. The Applicant believes that all pending claims are in condition for allowance and respectfully requests that the rejections be withdrawn and the application be passed to issue.

Objection to Claim 58

Claim 58 is objected to because “the fluid injector” should recite “the fuel injector.” The Applicant is amending Claim 58 to recite “the fuel injector” and respectfully requests that the objection to Claim 58 be withdrawn.

Rejection of Claims 48-51 and 53-55 under 35 U.S.C. § 102(b) as being anticipated by Kuehnle (WO 98/20241)

Claims 48-51 and 53-55 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kuehnle (WO 98/20241) (hereinafter, “Kuehnle”). Claim 48 is being amended to recite “...atomizing and injecting a liquid fuel into and substantially evenly along a length of a chamber defined by a radially expandable piston...” Pages 7-8 and Figs. 2-5 of the present application describes a fuel injector according to an embodiment of the present invention comprising an inner tube 30 and an outer tube 32 concentrically aligned inside the inner chamber 20 of each radial piston 16. The application, at pages 7-8, states that the inner tube 30 and outer tube 32 each have “a plurality of apertures along [their] length[s].” When one of the tubes is rotated with respect to the other tube, the apertures on the inner tube 30 briefly align with the apertures in the outer tube 32, enabling a small amount of fuel to pass from the inner tube through the outer tube 32 and into the inner chamber 20 of each radial piston. Fig. 3 shows the outer tube 32 extending substantially from the top surface 70 of the inner chamber 20 of each radial piston 16 to the bottom surface 72 of the inner chamber 20 of each radial piston 16 and

apertures extending over the entire length of the outer tube 32 (the inner chamber 30 is not shown). By simultaneously aligning the apertures of the inner tube 30 and outer tube 32, fuel is distributed substantially evenly from the top surface 70 to the bottom surface 72 into the inner chamber 20 of each radial piston 16. According to the application at page 8, the even distribution of fuel in the inner chamber 20 of each radial piston 16 improves fuel efficiency over engine designs in which fuel is injected at specific locations.

Kuehnle does not anticipate the pending claims of the present application because it does not disclose "...atomizing and injecting a liquid fuel into and substantially evenly along a length of a chamber defined by a radially expandable piston..." Rather, Kuehnle discloses a fuel input nozzle 74 that distributes fuel through an input valve 72 into the internal chamber 38 of a radial piston 36. The fuel in Kuehnle will be concentrated at the top of each internal chamber 38 near the input valve 72. Since Kuehnle does not disclose a fuel injecting system that provides for a substantially even distribution of fuel within the combustion chamber, an engine according to Kuehnle will not achieve the fuel efficiencies enjoyed by an engine according to the Claims of the present application.

For the foregoing reasons, Claim 48 is not anticipated by Kuehnle. Claims 49-51 and 53-55 are also not anticipated by Kuehnle for at least the same reason. Accordingly, the Applicant respectfully submits that the Examiner has not met the burden of making a prima facie case of anticipation and requests that the rejection to Claims 48-51 and 53-55 under 35 U.S.C. § 102(b) be withdrawn.

Rejection of Claims 56-58 under 35 U.S.C. § 103(a) as being obvious over Kuehnle (WO 98/20241)

Claims 56-58 are rejected under 35 U.S.C. § 103(a) as being obvious over Kuehnle (WO 98/20241) (hereinafter, "Kuehnle"). Claim 56-58 depend on Claim 48. For the reasons stated above, Kuehnle does not disclose or render obvious all elements of independent Claim 48. Specifically, Kuehnle does not disclose or render obvious "...atomizing and injecting a liquid fuel into and substantially evenly along a length of a chamber defined by a radially expandable piston..." Therefore, Claims 56-58 are not rendered obvious by Kuehnle for at least the same reason. Accordingly, the Applicant respectfully submits that the Examiner has not met the

burden of making a prima facie case of obviousness and requests that the rejection of Claims 56-58 under 35 U.S.C. § 103(a) be withdrawn.

Rejection of Claim 52 under 35 U.S.C. § 103(a) as being obvious over Kuehnle (WO 98/20241) in view of Russell (WO 02/079625)

Claim 52 is rejected under 35 U.S.C. § 103(a) as being obvious over Kuehnle (WO 98/20241) (hereinafter, "Kuehnle") in view of Russell (WO 02/079625) (hereinafter, "Russell"). Claim 52 depends on Claim 48. For the reasons stated above, Kuehnle does not disclose all elements of independent Claim 48. Specifically, Kuehnle does not disclose or render obvious "...atomizing and injecting a liquid fuel into and substantially evenly along a length of a chamber defined by a radially expandable piston..." Russell also does not disclose or render obvious this element of independent Claim 48. Therefore, the Examiner has not met the burden of showing a prima facie case of obviousness for Claim 52 by the combination of Kuehnle and Russell. Accordingly, the Applicant respectfully requests that the rejection of Claims 56-58 under 35 U.S.C. § 103(a) be withdrawn.

New Claims 68 - 73

New Claims 68-73 are being added and depend on independent Claim 48. For at least the reasons stated above, Claims 68-73 are not anticipated and are not rendered obvious by any of the cited references. Accordingly, the Applicant respectfully requests that Claims 68-73 be allowed.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 

David J. Thibodeau, Jr.

Registration No. 31,671

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

Date:

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